Application No.: 10/006,174

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-16   (Cancelled)

17.   (currently amended) A system for determining a biological sequence's orientation comprising a processor; and a memory coupled with the processor, the memory storing a plurality of machine instructions that cause the processor to perform logical steps of:

obtaining a plurality of evidence about the orientation, wherein at least one the evidence is selected from a group consisting of consensus direction, alignment strand of every sequence in a the cluster, labeled strandedness for RNAs, labeled strandedness for ESTs, splicing-indicated strand for all sequences and polydenylation indicated strand for all sequences sequence annotation; and

determining the orientation using a Bayesian analysis of the evidence.

18.   (currently amended) The system of Claim 17 wherein the step of determining the orientation comprises:

establishing an hypothesis that the biological sequence having said orientation;

defining estimating a prior probability of an the hypothesis that the biological sequence having said orientation;

estimating a probability of the evidence assuming the hypothesis is true; and

calculating a posterior probability that the said hypothesis is true.

2

Application No.: 10/006,174

19. (original) The system of Claim 18 wherein the step of calculating is performed according the Bayes' rule.

20. (previously presented) The system of Claim 19 wherein the biological sequence is a nucleic acid sequence.

21. (original) The system of Claim 20 wherein the nucleic acid sequence represents a cluster of nucleic acid sequences including at least one EST sequence.

22. (currently amended) The system of Claim 21 wherein the plurality of evidence comprises evidence ~~form~~ from poly-A/T tail analysis, inferred splice sites and external sequence annotation.

23. (original) The system of Claim 22 wherein the external sequence annotation comprises RNA label and EST label.

24. (original) The system of Claim 23 further comprising testing a null hypothesis that the orientation determination is correct and conflicting evidence observed is due to random error.

25-32 (cancelled)

3